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A DESCRIPTION

OF THE APPEARANCES OF THE

HUMAN EYE IN HEALTH AND DISEASE

AS SEEN BY THE OPHTHALMOSCOPE.

FIFTH SERIES.—SYPHILIS.

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GENERAL REMARKS.

Figs. 1, 2, and 5 of the plates refer to inherited syphilis. Such appearances are frequently observed in persons who have suffered from syphilitic (so-called interstitial or strumous) corneitis (the form of corneitis so well described by Mr. Jonathan Hutchinson in the 'Ophthalmic Hospital Reports' for 1857 to 1859).

Figs. 3, 4, 6, 7, 8 represent changes observed in the eyes of persons suffering from "secondary syphilis."

The proofs of the intraocular changes represented in the plates being owing to syphilis are altogether of an empirical kind. The patients, in whom they were observed, suffered from syphilis. In inherited as well as in secondary syphilis the final effects of the morbid changes are those of atrophy, *i. e.* destruction of more or less of the textures affected.

The general features of intraocular syphilitic changes are those of temporary hyperæmia round a focus of "effusion," "lymph formation," temporary loss of transparency, frequently with rupture of blood-vessels, and finally atrophic changes—a repetition of what so often is observed in the cornea and iris. Opacities in the vitreous chamber are frequent, and may be so considerable as to hide the retina, &c., from view.

Outward inflammation—redness of the conjunctiva or sclerotic, iritis, corneitis, &c.—accompanying deep-seated inflammation is not the rule. Often we find traces of iritis in one eye, with inflammation of some part of the choroid in the other.

Pain, as long as the inflammation is confined to the parts which lie within the area of the retina, is hardly ever complained of. Loss of transparency and of definedness of outline, is found at the inflamed part.

Lymph nodules (figs. 3, 4) and general turbidity (figs. 6, 7, 8), owing to effusion into and round the choroid and into the adjoining retina and vitreous chamber, are the usual forms of effusion.

Anæmia (arterial) of the retina is observed in most cases during the stage of effusion and of atrophy (figs. 3, 6, 7, 8).

Peculiarities in the colour, size, and outline of the optic disc (optic nerve) are observed in all cases in which the inflammation appears in the tunics immediately adjoining the disc. The outline of the optic disc is more or less effaced (figs. 3, 6, 7, 8); when the inflammation has ceased, we find atrophy (a yellowish and white ring round the disc) marking the seat of passed inflammation.

Figs. 3, 6, 7, 8 represent forms of inflammation frequently observed—inflammation of the optic disc and of the choroido-retinal aperture and of the vitreous adjoining it.

The form represented in figs. 7, 8 is accompanied by increased tension of the eyeball ($T + \frac{1}{2}$), the one shown in figs. 3, 4, 6, often by decreased tension of the eyeball ($T - \frac{1}{2}$). The swollen or inflamed condition of the optic disc naturally interferes with the passage of the blood intended for the retina. Sometimes no blood at all is visible in the arterial blood-vessels (fig. 7), or only a few thin blood-vessels can be traced across the ill-defined disc into the retina (figs. 6, 8).

Whether the anæmic and partial atrophy (judging from the much impaired sight of the eye) of the optic disc of fig. 2 is owing to inflammation of the disc or of the adjoining choroid, or of both, it is difficult to decide.

White patches, as seen in figs. 1, 2, are found in many highly myopic eyes, as the result of mere distension of the tunics; they may in this case be the sequel of choroiditis. That the optic disc of fig. 2 had been inflamed becomes probable from the state

of the retinal blood-vessels which have to pass through the disc. The arteries, as regards number and calibre, are much below par, while the veins are highly varicose.

Atrophy of the part invaded by the effusion, is the usual sequel. Ophthalmoscopic appearances vary, according to the stage of atrophy; they are very conspicuous in the choroid. Absence of blood and pigment renders the choroid transparent, and brings into view the white sclerotic; such spots are termed white atrophic portions of choroid. It must be borne in mind that the white colour is derived from the sclerotic, seen through the transparent choroid. White spots in the choroid itself, lymph-nodules, some kinds of infiltrations, tumours, &c., often occur. Their ill-defined outlines, their want of brilliancy, the absence of pigment, the turbid condition of adjoining parts, readily distinguish them from transparent atrophic parts of the choroid.

Pigment patches, in groups, circles, well defined, of deep brown or black colour, skirting or overspreading transparent atrophic parts, or occurring alone, are often seen (see figs. 1 to 5). Displacement of choroidal and hexagonal pigment-cells, with saturation of the tint of their pigment-granules, is the most frequent cause.

Atrophic spots in the retina are generally transparent. Impaired or destroyed function of portions of retina, especially if these rest on atrophic portions of choroid, with anæmia of the retina, points out such atrophic patches. Such patches were situated upon the atrophic choroid patches shown in figs. 1, 2, 4, and 5, as shown by the impairment or loss of sight of these parts.

The sight.—In the majority of cases we observe the loss or impairment of sight to be not sudden (as in apoplexy), but rapid, within from twelve to thirty-six hours (as in the case of figs. 3 to 8). Those who have observed the quick appearance and increase of lymph in iritis will readily understand the cause of the rapid impairment of sight. In most cases of syphilis the impairment of sight could be traced to “inflammatory” effusion among the structures of the visual apparatus. The impairment of sight, if the effusion localises itself in the region of the yellow spot, is generally perceived at once. If occurring in certain parts of the cerebral visual apparatus, or round the

optic disc, or along the margin of the retina near the ora serrata, it may escape notice at first.

Treatment.—Wherever within the eye the morbid changes be situated, whether the iris or cornea be implicated or not, have the pupil kept well dilated by atropia, and continue this for three or four weeks from the time when the attack commenced.

One or two leeches to the temple at bedtime will relieve pain, should the effective use of atropia, as shown by the dilatation of the pupil, not have done so.

The inconvenience arising from intolerance of light should be obviated by the use of blue-tinted spectacles.

No near work, reading, &c., should be allowed while inflammatory changes are existing. Once the atrophic spots have appeared, the free use of the eyes may be permitted.

General medical treatment should be tried in all cases. Mercury during the formation of lymph and of effusion, and iodide of potassium after this stage has passed, are freely given at Guy's.

The patient should live well, but while under medical treatment should abstain from malt liquor.

If within from four to six weeks no marked improvement of sight ensues, little hope remains. Iridectomy can be recommended if the tension of the eyeball is increased, especially if the optic disc represents the appearance shown in figs. 7, 8.

The prognosis of cases like figs. 6, 7, 8, is unfavorable, and the course very chronic.

DESCRIPTION OF THE PLATES

Illustrating Mr. Bader's Description of the Human Eye in Health and Disease as seen by the Ophthalmoscope.

Fig. 1. Right eye. Fig. 2. Left eye. From a patient, æt. 17, suffering severely from inherited syphilis. Both eyes eighteen months ago were impaired by corneo-iritis; both at present are what is termed hydrophthalmic; there exists bare perception of shadows of the left, high degree of weak and of short sight of the right eye. The left eye had been defective as long as the patient remembers.

Fig. 1. The yellowish-pink round optic disc (optic nerve) (represented much enlarged) occupies the middle of the figure; diverging from its clear centre we observe numerous retinal arteries and veins (the darker vessels represent the veins). Surrounding the optic disc we see a white figure (the sclerotic, seen through the atrophic choroid and transparent retina). A brownish-black line of pigment intervenes between this white figure and the red colour of the choroid. The latter, near the white figure, has a much lighter red tint, indicating a thin—somewhat atrophic—condition of the choroid. In the red choroid we observe a peculiar network of darker red lines (closer set patches of capillary blood-vessels of the choroid).

Fig. 2. Left eye. The optic disc, in the middle of the figure, differs, as regards colour, from the one of the right eye (fig. 1); it appears grey (anæmic) with a clear centre. The retinal vessels, which diverge from it (especially the arteries), are less numerous than in the right eye, while the retinal veins are very varicose, probably owing to morbid changes in the optic disc, giving rise to impeded in- and egress of blood.

As regards the white figure round the optic disc, the pigment, the varieties of red colour of the choroid, the same holds good as for fig. 1.

Figs. 3 and 4. From the left eye of a person, æt. 33, suffering from secondary syphilis. The pupil of this eye was sluggish, somewhat dilated; there were no outward signs of inflammation; with this eye large objects could be recognised with difficulty. The right eye had suffered from repeated attacks of iritis.

Fig. 3. The optic disc (optic nerve) and the tunics immediately adjoining it. The somewhat oval-shaped optic disc occupies the middle of the figure; its grey colour is of a lighter tint in the centre (where there are no nerve-fibres, but only connective tissue). The disc is surrounded by a yellowish ring, which shades off into the red colour of the choroid. Diverging from the optic disc, we observe the retinal blood-vessels; some of these are unequally dilated; others, owing to impaired transparency of the retina, are barely visible in some places.

The two yellowish, round, somewhat ill-defined spots, to the left of the optic disc, are supposed to be nodules of lymph, situated in the choroid; a retinal blood-vessel may be seen passing over them. The group of black and yellow spots above and to the right of the optic disc represents atrophic portions of choroid.

Fig. 4. A portion of the sclerotic, choroid, and retina of the eye represented in fig. 3.

The yellowish, somewhat ill-defined, small round spots, seven in number, are supposed to be nodules of lymph, situated in the choroid. The yellowish spot in

Description of Mr. Bader's Plates—(continued).

the centre, and the one at the lower margin of the figure with brownish-black spots upon it, represent atrophic portions of choroid. Previous to this, lymph and infiltration are supposed to have occupied these parts of the choroid. Ramifying over these spots and over the uniform turbid red colour of the choroid, we notice blood-vessels of the retina; some, especially those over atrophic portions of choroid, are abnormally large. In the choroid to the right of the figure we see a large blood-vessel, and along its sides a yellowish line, which may be lymph.

Fig. 5. Left eye. From a person, *æt.* 11, suffering severely from inherited syphilis. Both eyes were large—"hydrophthalmic"—and had suffered from corneo-iritis. There was partial loss of sight.

The figure represents the optic disc (optic nerve) and the tunics immediately adjoining it. The light grey blue (anæmic), somewhat oval-shaped optic disc occupies the centre of the figure; diverging from it we see the blood-vessels of the retina; their number and calibre, considering the age of the patient, are much below par. The narrow yellowish-white ring round the optic disc—somewhat ill-defined where it joins the red colour of the choroid—is observed in most eyes in which choroidal changes, with inflammation, have occurred. The yellowish-white and the black spots represent atrophic portions of choroid.

Fig. 6. Right eye. From a patient, *æt.* 34, who suffered from secondary syphilis; pupil sluggish, of medium dilatation; no outward sign of inflammation; bare perception of shadows.

The ill-defined grey-white part in the middle of the figure represents the optic disc (optic nerve) and the tunics immediately adjoining it. Diverging from the middle of the grey-white part we observe few thin retinal blood-vessels. Their outlines are very indistinct where they pass from the grey (infiltrated opaque retina) upon the red (transparent retina, subtended by red choroid) portion of the figure. Infiltration, swelling, and loss of transparency are the cause of the altered colour and of the loss of definedness of the optic disc and adjoining tunics.

Fig. 7. Right eye. From a patient, *æt.* 49, suffering from secondary syphilis; had iritis in both eyes; bare perception of shadows.

The dirty red, ill-defined sketch, occupying the middle of the figure, represents the optic disc (optic nerve) with a narrow strip of the tunics adjoining it. No defined retinal blood-vessels, no details of the surface, boundary, &c., of the optic disc are visible; this is owing to infiltration and to concomitant morbid changes of the choroid, retina, and of the adjoining vitreous substance.

Fig. 8. Right eye. From a patient, *æt.* 47, suffering from secondary syphilis; pupil sluggish, medium dilatation, no outward inflammation; perception of large objects. Had iritis in the left eye.

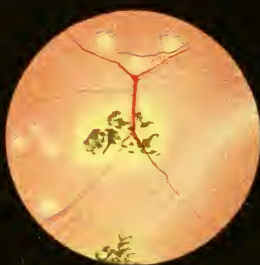
The optic disc (optic nerve) (represented much enlarged) occupies the middle of the figure. The greyish-red ring defines its outline; the optic disc, compared with the red colour of the choroid, has a lighter turbid red colour. Diverging from it we observe a few retinal blood-vessels; their outlines, owing to impaired transparency of the adjoining structures, are indistinct. The choroid (the red surface which surrounds the optic disc), instead of having a clear transparent red colour, appears turbid red; this is owing to impaired transparency—from chronic inflammation—of the choroid, of the retina, and of the adjoining vitreous substance.



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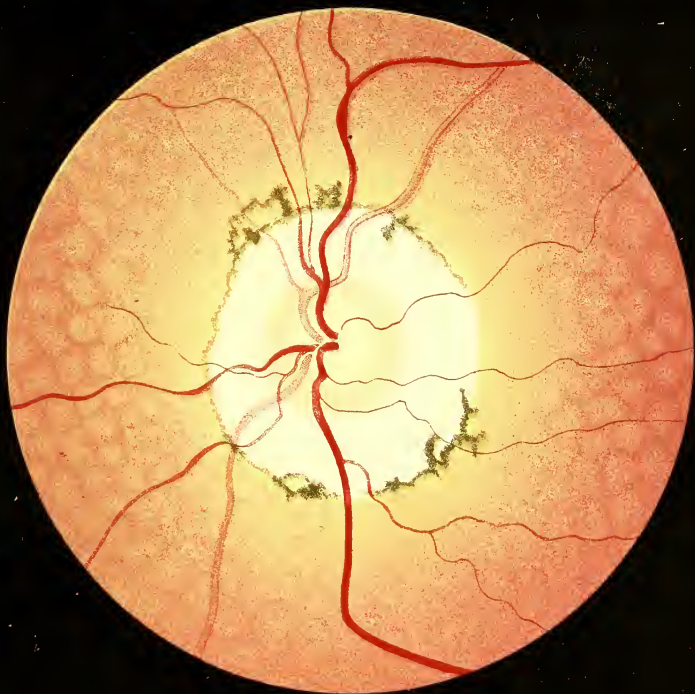
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